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ABSTRACT

The purpose of this study was to examine the effect of group size on toddlers' peer interactions and social interactions with mothers. In particular, the study sought to answer the following questions: (1) When both mothers and peers are available to the child, with whom does he/she prefer to play? and (2) Are there differences in the types of social behaviors directed to peers and mothers? Subjects, 5 girls and 11 boys, were observed while interacting in both a group and a dyadic setting. To assess interaction in a group, toddlers and their mothers were observed during a regular free play session for a period of one hour over two or three days. To assess interaction in a dyad, each pair of children and their mothers were observed for 15 minutes while interacting in a nursery school classroom. (Mothers were asked not to initiate interaction with their children.) Subjects' positive and negative behaviors (e.g., giving an object versus struggling over an object) and whether the behaviors were directed toward another child or an adult were recorded. Results indicated that size of group had no effect on the frequency or type of behavior directed towards peers. Whether in dyads or groups, the children interacted with peers very infrequently. However, size of group did have an effect on the frequency of behaviors directed towards adults. The children interacted much more with their mothers in the group setting then they did in the dyad setting. For example, the children talked to their mothers 28 times in the group setting and 21 times in the dyad setting. The children also played together with their mothers nine times in the group setting and less than once (i.e., less than 15 seconds) in the dyad setting. (Author/MP)

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TODDLERS' SOCIAL PLAY

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From one year of age to four years of age, there is a dramatic increase in children's ability to play with peers. One-year olds interact very infrequently with each other. They have difficulty maintaining any sequence longer than a simple initiate and respond chain (Mueller and Vandell, 1979); for example, one child will offer a toy, the second child will take it, and they then drift apart. When playing with their mothers or playing alone with toys, however, one-year olds are capable of sustained sequences of play. It is specifically in play with peers that one-year olds show a deficit. By four years of age, children are able to maintain long complex sequences of interactions with peers (Jennings and Suwalsky, 1980). For example, in playing house, children may first discuss the roles each should have ("You be the sister") the setting ("This is the sister's bed"), and the general theme ("Let's pretend you're sick and I take you to the doctor"). The children may then act out these roles and elaborate them as they play adding a variety of sub themes (e.g. going to the store to get medicine).

Until recently, the development of early peer relations has been a neglected area. There are two main reasons for the recent upsurge of interest in this area:

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1) Children are being placed in group settings at younger ages as more mothers go back to work; and 2) interest in identifying determinants of satisfactory peer relationships in later life.

Since relatively little is known about early peer interactions, studies to date have been largely descriptive. These studies have sometimes had conflicting results. Bronson (1975), for example, found that interactions were quite infrequent and predominantly negative in the second year of life; furthermore, their frequency did not increase in her longitudinal study from 12 to 24 months. Conflicting findings were reported in a study by Eckerman, Whatley and Kutz (1975); they found social play increased over this age period. By two years of age they reported that social play exceeded solitary play in frequency and that children preferred play with toys and peers over play with their mothers.

There are a number of possible reasons for differences in results across studies. One of these factors is the familiarity of the peers and the setting. Another factor is the presence or absence of the mother and the availability of play things. Still another factor is the criteria used to define the sociability of play. For example, in one of the two studies discussed above (Eckerman, et al, 1975), use of the same play material without interaction was considered to be social play. In the other study, (Bronson, 1975) such play was not considered to be social. A final possible factor is the number of children in the group. Mueller and Vandell (1979) concluded that the most likely reason for discrepancy in results across studies is that in some children are studied in dyads while in others they are studied

in groups.

Observations of groups of young toddlers indicate that nearly all interactions are dyadic (Durfee and Lee, 1973; Bronson, 1975; Bridges, 1933). Interactions among three or more children appear to be quite rare until three or four years of age. Some preliminary data on six toddler boys, however, indicates more social interaction in dyads than in a group. Mueller and Vandell (1979) report a study by Vandell (1976) in which toddler's social interactions were compared in a group setting and a dyadic setting over a six month period. Overtime, interaction increased in the dyadic setting but not the group setting.

In our study, we examined the effect of the size of the group on toddler's interactions with peers. We observed children in both a group and a dyad. Both the physical setting and other children were familiar to the child. The children were members of the same toddler group.

We were also interested in comparing toddlers interactions with peers with their interactions with their mothers. When both mothers and peers are available to the child, with whom does he or she prefer to play? Are there differences in the type of social behaviors directed to peers and mothers? These are the questions we sought to answer in this study.

METHOD

Subjects. Sixteen children were included in the study (5 girls and 11 boys). The children ranged in age from 1 3/4 to 2 3/4. Children were predominantly from working class backgrounds; all but one were white.

Children from three toddler groups participated in the study. Each group had been meeting 5-6 weeks prior to our beginning observations. The children met once a week for 2½ hours with their mothers present. The groups met in a nursery school classroom. Each group consisted of 5-6 toddlers, their mothers, and two teachers.

Procedure. The children were observed from behind a one-way mirror. To assess interaction in a group, the children were observed during their regular free play period. The children were observed for a total of one hour over two or more days.

To assess interaction in a dyad, the mothers were asked to bring their children for a special session. The dyadic sessions occurred in the same room in which the class was held and at the same time of day; however, they occurred on a different day of the week from the regular class. Thus the setting was identical for the two sets of observations. In order to observe each child with two different peers in a dyadic setting, three mothers from the same class were asked to bring in their children at the same time. Each pair of children (and their mothers) were observed together

for 15 minutes while the third child waited in a separate room with his mother. The mothers were present during the observation but were asked not to initiate interaction with them. The teachers were not present. Each child was observed a total of thirty minutes with two different children.

An effort was made to conduct the observations in the two settings independently of each other, that is, with different observers recording the children's interactions in the two settings. For four of the children, however, this was not possible. The same observer collected some of the data on these four children in both settings.

Observational Measures. We recorded a variety of specific behaviors. In all there were 12 codes, ranging from simply watching to playing together. Both positive and negative behaviors were included: for example, giving an object versus struggling over an object. We also recorded whether the behavior was directed toward another child or an adult. A complete listing of the codes can be found in Table 1.

To record the observations, we used a 15 second time sampling unit, observing for 15 seconds, then recording during the subsequent 15 second unit.

Results

Thus far, we have analyzed data on 11 of the 16 children. The data for the remaining 5 children appear highly similar and it is unlikely that any meaningful changes will occur when the analysis is carried out for the entire group. The means for each behavior

are given in Table 2. We will first discuss the children's behavior with peers and then their behaviors with adults. Finally, the children's behavior with peers versus adults will be contrasted.

Behavior directed toward peers. Size of group had no effect on the frequency or type of behavior directed towards peers. Whether in dyads or groups, the children interacted with peers very infrequently. Thus we did not find support for our expectation that children interact more when in dyads.

Direct interactions with peers was quite limited as the table of means indicates. In 30 minutes of observations, the average child talked only twice to a peer and offered an object only once. He or she played together with another child on a common task 2 times or less. Social behavior that did not involve direct interaction occurred considerably more often: the children were in proximity to another peer during 1/3 of the time units and for almost the same mount of time they played side by side with the same or similar object. Thus the children seemed to be aware of each other and their play seemed to be influenced by the play of other children but direct interaction was minimal.

Behavior directed towards adults. Size of group did have an effect on the frequency of behaviors directed towards adults. The children interacted much more with their mothers in the group setting than they did in the dyad setting. This difference was statistically significant for almost all the behaviors we examined. For example, the children talked to their mothers 28 times in the

group setting and 21 times in the dyad setting. The children also played together with their mothers 9 times in the group setting and less than once in the dyad setting. This finding of greater interaction with the mother in the group study had not been anticipated.

Comparison of behavior with peers and adults. As has already been indicated, the children interacted more with adults than peers in both settings. This preference for interacting with adults was especially marked in the group setting. The strength of the children's preference for adults can be seen from the fact that they talked 10 times more often to adults than peers and showed or gave objects 7 times more often to adults. The only behavior that occurred more frequently with peers than with adults was play with the same or similar object without any direct involvement with the other person. Thus parallel play occurred more frequently with peers but direct interaction occurred much more frequently with adults, particularly in the group setting.

DISCUSSION

The findings of this study were not as we expected. The children did not interact more with each other when paired with a single child than they did in a group setting. Mueller and Vandell (1979) had suggested that conflicting findings across studies regarding frequency of peer interactions might be due to differences in group size. While our findings do not support this suggestion, they do offer another explanation for discrepant

findings across studies. Our findings indicate that toddlers show considerable awareness of other children and that this awareness is reflected in a fairly high frequency of playing with the same or similar toy as another child. Our findings also indicate that direct interaction with peers is quite infrequent. Thus the use of different criteria to define social play will lead to quite different conclusions regarding the frequency of toddler peer play. Studies which have reported high levels of play (e.g., Eckerman, et al (1975) have considered parallel play to the social play whereas others reporting lower frequencies (e.g. Bronson, 1975) have not.

While we did not find that the size of the group affected the amount of peer play, it did affect the amount of interaction with adults. In the group setting, our toddlers interacted more with adults and only infrequently played alone or with peers. In the dyad setting, they played more often by themselves and less often with adults. In the large group, the children appeared to need special support from their mothers. The classroom was a highly stimulating and fairly novel situation for these toddlers. They appeared to feel insecure in the setting and consequently attachment behaviors toward their mother were increased and exploratory behaviors were decreased. The dyad setting was apparently less stressful and the toddlers were able to explore more; however, they chose to play more often with objects than with peers.

We chose to study two year olds with the recognition most of the studies of peer interactions have been conducted on children under age two (see Mueller and Vandell, 1979) and children over three. Because the children in our sample did not interact with one another either in the group or the dyadic, two possible explanations were considered. One is that the familiarity with the setting and with each other could have influenced the children's ability and interest. To pursue this idea one of us (NEC) undertook to study a series of video tapes of another group of two year olds who had been together in the same setting for a long time; they had been meeting bi-weekly with their mothers since they were six months old. Because the photographers did not focus on each child for a specific length of time, it has not been possible to record the interaction in a quantifiable manner as we did with our original sample. Our impressions were that these two-year-olds had very litte contact with their mothers. In this playgroup, the mothers sat back and were not expected to interact with their youngster as were those in our sample. The children, however, had two teachers available with whom they interacted intensely, just as our group had interacted with their mothers. Once these differences were assimulated, it became apparent that these two-year-olds were also not interacting with one another in spite of their familiarity with the setting and with each other. There were few, if any takes or offers, no verbalization, little observable eye contact and little teaching. There was, as with our sample, common interests over toys

and parallel play (that is, social behavior as defined by Mueller and Vandell), but little social interchange.

This has let us to speculate about the possibility that there may be a decrease in social behaviors at age two-- that is, a U shape curve, in which social behaviors with peers decrease between one and two and then increase as the child nears the third birthday. Intrigued by this idea, we looked at the videotapes of the second group of children at age one and saw that they were indeed vocalizing, looking, touching and engaged in brief encounters over toys. One proposed extension of our study, then, is to try to quantify the behaviors of this sample through viewing the videotapes. We propose sampling at three month intervals to see if there are fewer social behaviors and interactions at two years of age than at 1 year of age; tapes on these children are available from three months to three-and-a-half years.

Theoretically there is some support for this idea. Mahler's work on separation-individuation (Mahler, Pine, and Bergman, 1975) indicates that between 18-24 months children are in the rapprochement period when there is an up surge of intense interest in the primary caretaker. She attributes this in part to the child's cognitive awareness of separation which temporarily increases separation anxiety and concerns about the caretaker's where-abouts. As libidinal object constancy develops through the third year of life the child's emotional energies gradually become available to develop meaningful relationships outside the family. Burton White

(1975), using a behavioral perspective, also speaks of seeking and maintaining contact with the primary caretaker as one of the main activities of the two-year old.

In any case, our study has taught us that there is still a great deal to be learned about the social development of two year olds. We plan to pursue the idea of a possible U shaped curve in social relationships by analyzing the videotapes of the second group of children from age six months to 3½ years. Another avenue for study will be two-year-olds who have been in group care since infancy where peer and environmental familiarity has been controlled and where mothers are absent. Will those two year olds interact more than those we have studied and propose to study? Will this refute the idea of the U shaped developmental curve? Hopefully, we'll find some answers to these intriguing questions. Children are entering group care at earlier and earlier ages. The impact of these early social contact with peers on subsequent social development are of concern and can only be evaluated by studies such as these.

TABLE 1

Definitions of Social Behaviors*

I. Watch Only (E)	Continuous visual regard of a person or their activities for at least three seconds (not accompanied by another scorable behavior except proximity).
II. Proximity and Contact	
Proximity	Within reach of other.
Contact (E, L)	Any part of body clearly contacts person in non-forceful manner includes patting or being patted, non-forceful hugging or being hugged. Record proximity also.
Push/Pull/Strike (E, L)	Forceful physical contact with other by either hand or foot, including hitting, pushing, kicking, or forceful hugging. Record proximity also.
III. Same Object (E)	Contact of the same toy as other or a very similar toy for at least three continuous seconds without any direct involvement in the activities of the other person. Giving or taking an object is not double coded here.
IV. Neutral or Positive Social Acts	
Positive Vocalization (E)	Non-negative sounds that are loud enough to be heard; they may or may not be distinquishable as words. Code whenever it occurs regardless of whether other categories are also coded. If it is not clear to whom it is directed, code as question mark.
Show/Give/Offer an Object (E)	Hold out an object towards a person within their reach. Includes imaginary food.
Take/Accept an Object (E)	Take an object offered (not simply highlighted) by another or if unoffered take from the possesion of another without a struggle.
Play Together (E)	Act together to perform a common task, such as building a tower of blocks; or each

*Social behaviors are behaviors directed at another person or their activities.

	repeatedly takes turn performing an activity with attention to the other's activity, as when one builds a tower of blocks, stands back and laughs when the other knocks it down; or one follows directions of other, as when one person completes a form-board putting the pieces in the spaces indicated by the other. If the same object is used, code also as same object.

V. Negative Social Acts

Negative Vocalization (E)	Negative vocalization including crying, protesting other's behavior or suggestion or other's presumed future behavior while watching other person, e.g., "No," "Mine." Code whenever it occurs regardless of whether other categories are also coded.
Struggle Over an Object (E)	Both attempt to gain possession of same object, including pulling, pushing, whining, etc.
Refuse to Comply	Physically resists demands of another person or contact with another person. If behavior also fits definition of struggle over an object, code as struggle.

This coding system is derived from the following sources (especially the first):

(E) Eckerman, C.O., Whatley, J.L. & Kutz, S.L. Growth of social play with peers during the second year of life. Developmental Psychology, 11, 1975, 42-49.

(L) Lewis, M., Young, G., Brooks, J. & Michalson, L. The beginning of friendship. In M. Lewis & L. A. Rosenblum (Eds.), Friendship and Peer Relations. New York: Wiley, 1975.

(B) Bronson, W.C. Development in behavior with age-mates during the second year of life. In M. Lewis & L. A. Rosenblum (Eds.), Friendship and Peer Relations. New York: Wiley, 1975.

TABLE 2

Means of Social Behaviors in Dyads and in Groups

	Dyad			Group		
	Child	Adult	Unclear	Child	Adult	Unclear
Watch *			18.9			35.1
Proximity*	40.4	57.9		44.6	90.4	
Contact*	4.3	16.1		3.0	25.1	
Push	0.2	0.0		0.1	0.1	
Play same object	31.0	18.0		37.7	22.2	
Positive Voc.*	2.0	20.8	9.0	2.2	28.1	6.6
Show/Offer	1.1	7.5		0.7	7.3	
Take/Accept	1.3	3.7		1.5	3.7	
Play/Together*	1.2	0.7		2.0	9.1	
Negative Voc.	0.9	0.9	0.2	0.9	1.2	0.0
Struggle Over Toy	0.0	0.5		0.6	0.0	
None*			22.4			7.4

*Significance difference (T-Test) found between dyad and group setting. For behaviors directed toward both children and adults, only behaviors directed to adults showed significant difference between setting.

Note: All means were prorated to 120 time units or 30 minutes of observation.

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